KANTAFLEX® ELASTOMERIC BRIDGE BEARING

APPROVED BY : MINISTRY OF ROAD TRANSPORT & HIGHWAYS, NEW DELHI / RDSO, LUCKNOW
DMRC,BMRC,HMRL,CMRL,KMRC,MUMBAI METRO, JAIPUR METRO, MIAL, BIAL AND MANY MORE

KANTAFLEX® designer of Bridge Bearing

Kantaflex® Elastomeric Bridge bearings are designed and manufactured as per IRC 83part II - 2015, with its latest amendment to meet the requirements of MORT&H specification for road and bridge works to section no : 2000 to clause no 2005 (Elastomeric bearing) and to international specification Union of Railways Code No UIC 772-2R (Use of Rubber bearings for Railways Bridges) and BS EN 1337-3 / 2005 (Structural bearing - Part 3 : Elastomeric bearing)

Kantaflex® Elastomeric bridge bearing consists of one or more internal layers of elastomer bonded to internal steel laminates shall be cast in single unit mold and vulcanized under heat and pressure to cater for translation or rotation of the superstructure by elastic deformation.

The raw elastomer used in bearings is polychloroprene of make : Neoprene W&WRT, Bayprene 110 & 210, Skyprene B5 & B30, Denka S 40 & M40 of low crystallization rate and adequate shelf life.

The content of the poly chloroprene of the bearings shall not be lower than 60% and the ash content shall be less than 5%. The steel laminates used in bearings shall meet the specification of IS2062 / IS1079

Property	Unit	Value Specified			Test Method
Physical Properties					
Hardness	IRHD	50 ± 5	60 ± 5	70 ± 5	IS : 3400 (Part II)
Minimum Tensile Strength - Molded test piece - Test piece from bearing	MPa	 17 14	 17 14	 17 14	IS : 3400 (Part I)
Minimum Elongation at break - Molded test piece - Test piece from bearing	%	 450 400	 400 350	 300 250	IS : 3400 (Part I)
Maximum Compression set (24h,100° C)	%	35			IS : 3400 (Part X)
Accelerated Ageing 72h, 100±1° C					
Maximum Change in Hardness	IRHD	+ 5			IS : 3400 (Part IV)
Maximum Change in Tensile Strength	%	-15			
Maximum Change in Elongation	%	- 30			
Adhesion Strength, Min.	kN/m	7			IS : 3400 (Part XIV)
Ash Content, Max.	%	5			IS : 3400 (Part XXII)
Ozone Resistance		No Cracking			IS : 3400 (Part XX)

Technical Data of Bearings

10 kN is equivalent to 1MT
Design Load of the bearing is equivalent to 10MPa
Dimension can also be designed as per requirement .

Shear Modulus of the bearing shall be 0.9 +/ - 0.18 MPa
Shear Bond test (Horizontal movement up to 2 x total elastomer thickness)

There are different reinforced types of elastomeric bearings:

Type I : Plain pad strip bearing
Type II : Laminated Bearings
Type III Laminated bearings with thick end laminates
Type IV Bearings with separate steel plate
Type V Bearings with PTFE Bonding with elastomer
Type VI Bearings with sliding interface
Type VII Elastomeric Bearings directly vulcanized with steel plate

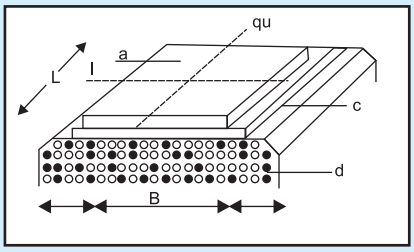
DESIGN OF THE ELASTOMERIC BEARING

- The overall length divided by overall width shall be less than or equivalent to two.
- If thickness of steel laminate is 3mm, then thickness of elastomer layer shall be either 8 or 10mm.
- If thickness of steel laminate is 4mm, then thickness of elastomeric layer shall be 12mm.
- Minimum thickness of top and bottom cover layer shall be 2.5mm and minimum thickness of side cover shall be 4mm.

BEARING INSTALLATION

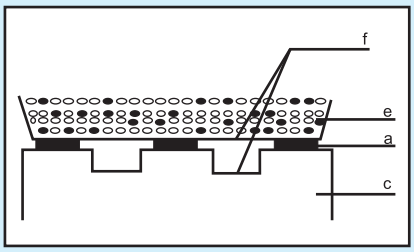
The installation of Elastomeric Bearing will vary with the type of construction whether the structure above the bearing is in-situ construction or precast concrete beams or structural steel beams. In general the bearing is placed on the surface provided at the right level. The lower and upper concrete surface between which the bearing is placed must be horizontal, parallel, clean & flat.

For in-situ construction the form work must be constructed so as to prevent concrete flowing from damaging the sides of the bearings. This is easily achieved by surrounding the bearing with expanded polystyrene & taping adequately between the top surface of bearing & polystyrene. Polystyrene should be removed after the structure has been cast.



a = Kantaflex® Bearing **L = Bearing length**
B = Bearing width **d = Support c = Mortar bed**
I = Longitudinal axis of bridge **qu = Longitudinal axis of bearing.**

For precast concrete beams and structural steel beam seated on laminated bearings, the bearing must be physically restrained from moving during beam installation. For this purpose a skim coating to be given prior to beam launching so as to takeup minor irregularities between the two surfaces & no displacement of bearing during erection of beam or concreting.



a=Kantaflex® Bearing **c=Abutment** **e=Bridge deck**
f=Recesses for flat jacks Load-carrying faces must be parallel

KANTAFLEX® ELASTOMERIC BEARINGS ARE :

MORT&H AND RDSO APPROVED.	**IN-HOUSE TEST FACILITIES**	**ECONOMICAL PRICE**
TRUSTED BEARING	**INSPECTION BY EXTERNAL AGENCY**	**DELIVERY IN SHORT DURATION**

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Above data are based on tests, which are reliable. We do not owe any responsibility for process which is not in our control